WHAT IS CLAIMED IS:

1. A speaker verification apparatus comprising:

an identity claim input part to which an identity claim is input;

a speaker selecting part for selecting voice information of a registered speaker corresponding to the identity claim input to the identity claim input part;

a speaker storing part for storing voice information of speakers;

a voice input part to which a voice is input;

a voice analyzing part for analyzing the voice input to the voice input part;

a speaker distance calculating part for calculating a verification distance between a feature parameter of the input voice and that of the voice of the registered speaker and the speaker distances between a feature parameter of the input voice and those of the voices of speakers other than the registered speaker that are stored in the speaker sorting part, based on the analysis results of the voice analyzing part and the voice information stored in the speaker storing part; and

a speaker judging part for determining whether or not the input voice matches the registered speaker corresponding to the input identity claim,

the speaker verification apparatus further comprising:

a false acceptance error rate input part to which a false acceptance error rate is input as a threshold, the false acceptance error rate being predetermined by a system manager or a user or adjustable depending on performance; and

a distribution estimating part for obtaining a probability distribution of interspeaker distances based on the speaker distances calculated in the speaker distance calculating part;

wherein the speaker judging part determines that the input voice is the voice of the registered person specified by the identity claim, in the case where the verification distance calculated in the speaker distance

calculating part is included in a region defined by the input false acceptance error rate in the probability distribution of the interspeaker distances.

5   2.   The speaker verification apparatus according to claim 1,
        wherein it is assumed that the probability distribution of the speaker distances is a normal distribution function, and
        the speaker judging part determines that the input voice is the voice of the registered person specified by the identity claim, in the case
10   where the verification distance calculated in the speaker distance calculating part is included in a region defined by the input false acceptance error rate in the probability distribution of the speaker distances obtained from the normal distribution function.

15   3.   The speaker verification apparatus according to claim 1,
        wherein the probability distribution of the speaker distances is obtained for each gender.

     4.   The speaker verification apparatus according to claim 1,
20   wherein the probability distribution of the speaker distances is obtained as a weighting addition of a plurality of normal distributions.

     5.   A method for verifying a speaker comprising:
        inputting an identity claim;
25   selecting voice information of a registered speaker corresponding to the input identity claim;
        inputting a voice of the speaker;
        analyzing the input voice;
        calculating a verification distance between a feature parameter of
30   the input voice and that of the voice of the registered speaker and the speaker distances between a feature parameter of the input voice and those of voices of speakers other than the registered speaker, based on the

analysis results and the voice; and

determining whether or not the input voice matches the registered speaker corresponding to the input identity claim,

the method further comprising:

5   inputting a false acceptance error rate as a threshold, the false acceptance error being predetermined by a system manager or a user or adjustable depending on performance; and

obtaining a probability distribution of the interspeaker distances based on the calculated speaker distances;

10   wherein it is determined that the input voice is the voice of the registered person specified by the identity claim, in the case where the calculated verification distance is included in a region defined by the input false acceptance error rate in the probability distribution of the interspeaker distances.

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6.   A computer-readable recording medium storing a program to be executed by a computer, the program comprising:

inputting an identity claim;

selecting voice information of a registered speaker corresponding

20   to the input identity claim;

inputting a voice of the speaker;

analyzing the input voice;

calculating a verification distance between a feature parameter of the input voice and that of the voice of the registered speaker and the

25   speaker distances between a feature parameter of the input voice and those of voices of speakers other than the registered speaker, based on the analysis results and the voice; and

determining whether or not the input voice matches the registered speaker corresponding to the input identity claim,

30   the program further comprising:

inputting a false acceptance error rate as a threshold, the false acceptance error rate being predetermined by a system manager or a user

or adjustable depending on performance; and

obtaining a probability distribution of the interspeaker distances based on the calculated speaker distances;

wherein it is determined that the input voice is the voice of the registered person specified by the identity claim, in the case where the calculated verification distance is included in a region defined by the input false acceptance error rate in the probability distribution of the interspeaker distances.